

Capsule 31

OCTOBER 1993

THE CALL OF SCIENCE FROM TIRUPATI

One of the hills of the cluster of Saptagiri is the Tirumala hill perched on which is the pilgrim town of Tirupati. But now joining the throngs of traditional pilgrims are people who bend their way left from the bifurcation that leads uphill to the temple complex. They are visitors to the Science Centre.

On September 23, 1993, President of India, Dr Shanker Dayal Sharma dedicated to the people of Andhra Pradesh the Regional Science Centre, Tirupati. Also present on the occasion were Governor of Andhra Pradesh, Krishna Kant, Chief Minister, Vijay Bhaskar Reddy and Minister for Science & Technology, M Sashidhar Reddy. This is the sixteenth in the chain of science centres established by and functioning under the National Council of Science Museums.

Inaugurating the Science Centre, the President said that "the primary purpose of science should be to serve mankind". He also stressed the need for 'bio-friendly' technology to preserve the environment. The Chief Minister observed that the country was on the verge of becoming a great industrial nation and could not afford to relax in the business of popularising science. Governor, Krishna Kant was of the opinion that the science centres should produce brave persons like astronomer Galileo who stood by truth even on pain of death. M Sashidhar Reddy, Dr A P Mitra, Chairman of the Governing Body of NCSM and Dr Saroj Ghose, Director General of NCSM also spoke.

The Science Centre has been developed on a 15-acre land given to NCSM by the government of

DIBNER AWARD FOR NCSM

The prestigious Dibner Award for 1993 has been awarded to National Council of Science Museums for its innovative exhibit "The Information Revolution" installed in the National Science Centre, Delhi.

Instituted by the Society for the History of Technology, USA, the award is given to museum exhibits that demonstrate excellence in the interpretation of history of technology. And NCSM's exhibit has been able, as the citation reads, "For imaginative and compelling use of artifacts and props to tell an interconnected story of India's people and their use of communications technologies to achieve social, political and economic goals".

While the exhibit has been able to highlight the social, political and economic ramifications of historical importance, the putting together of the exhibit has been able to highlight the hard work and united effort made by the member units of NCSM. Spread over three years, the work was completed in various stages : collection of artifacts came from the museums at Calcutta, Bangalore, Delhi and Bombay; concept development and display design were done by a team at the NCSM Headquarters and actual setting up of the gallery was accomplished by drafting people from Bombay, Bangalore, Lucknow, Bhubaneswar and Calcutta to work along with the hard working staff members of National Science Centre at Delhi. It was truly a national endeavour.



The Regional Science Centre, Tirupati

INAUGURATION



Inaugural address by the President
Dr. Shankar Dayal Sharma

Andhra Pradesh. With the Andhra Pradesh Council of Science & Technology (APCOST) sharing 50% of the initial capital cost for setting up the Centre, the work has been completed in 30 months and at a total cost of nearly Rs.2.60 crore.

Setting the visitors' curiosity in motion is the major gallery entitled 'Motion' that depicts through an array of interactive exhibits, various facets of motion. Here one can see and feel different characters of motion, various paths taken by moving body, relativity and laws of motion and even motion without movement, experiment with laws of motion, watch fascinating energy balls or convert motion from one form to another.

The visitors will just have to work the exhibits on their own to learn about the mysteries of human life, how the blood inside our body circulates or how the lump of food takes its long course down the oesophagus or the mechanical system working the bone joints or neuron movement of the nervous system.

The 'Fun Science' gallery is a fully interactive gallery on

physical sciences. Here one can handle the exhibits, try several given options and reveal in the process of discovery of scientific phenomena. Young and old delight with rolling balls, optical gadgets, strange liquids and lots more.

In the sections dealing in motion of celestial bodies, one can trek along the path of a planet to the rhythm of a beat and learn Kepler's Law of Planetary Motion, put oneself in the shoes of the moon and move like it does to understand the earth-moon relation.

The Science Centre will always play a significant role in bringing information about the frontier fields of science and technology to the common people. The display of temporary exhibitions on themes of global relevance will keep the visitors abreast of information. The exhibition on 'Global Changes' is the first of its kind imparting environmental consciousness to the visitors.

There is also a 'Children only' corner for pre-school children loaded with a large variety of puzzles and kits with which the

children can explore creativity. Apart from interactive galleries, the Centre aims to conduct a series of activity oriented programmes that include science fairs, student science seminars, computer programming, hobby centres, telescope making and sky observation. The inflatable dome planetarium will enhance astronomical interests.

A major attraction of the Centre is its sprawling 4.2-acre Science Park. Dotted with trees, indigenous and exotic, and lined with colourful hedges, the Park gives a wide view of the surrounding hill ranges. Nestling among the greens are 60 interactive exhibits on optics, sound, mechanics and more. Also present are live animals - ducks, monkeys, rabbits, peacocks and other birds - adding liveliness to the fun.

It is expected that very soon this Science Centre will be a popular place of learning for students. And for those who are unable to visit the Centre, the mobile museo-bus will travel to different corners of the state bridging the gap between man and science.



Exhibits of the gallery on "Motion"

INTERNATIONAL NEWS



Painting in the Art Gallery of Bahrain National Museum

Sprawling gracefully across the sea-front, between the cities of Manama & Muharraq, is the Bahrain National Museum. Occupying an area of 123,000 sq mtrs, the Museum traces the history and progress of man in Bahrain over the past 7000 years. The building is uniquely constructed with nine exhibition halls, each with an area of 625 sq mtrs, and connected by a large foyer of 1450 sq mtrs which is again used for temporary exhibitions.

The nine exhibition halls deal with the various aspects in keeping with the stated purpose. The nine exhibition halls are : Hall of Graves, Hall of Dilmun, Hall of Tylos and Islam, Hall of Documents & Manuscripts, Hall of Customs and Traditions, Hall of Natural History, Hall of Bahrain Past & Present, and The Art Gallery. Through exhibits, reconstruction of sites, through documents and manuscripts, the Museum is a rich treasure trove, resplendent in its task of collecting, preserving, studying and interpreting and utilizing tangible objects in programmes of exhibition, education and research.

Inaugurated on Dec 31, 1957, the Kuwait National Museum gradually developed itself into one of the most active cultural centres in Kuwait. Through excavations of archaeological sites and gathering of exhibits that ranged from flint implements to private Islamic art collections to ocean-going booms, the Museum is a storehouse extraordinary.

The Kuwait National Museum occupies an important site within the City Plan. It is located on Arabian Gulf Street between the Seif Palace and the National Assembly (Parliament), and it is close to the old commercial centre, the ancient bazars, old mosques, banks and major hotels. The planned project of erecting a National Public Library in close proximity to the Museum will enhance the museum's cultural activities and enrich its scientific research programmes.

At the beginning, the collection of the museum was limited to the Ethnographic heritage, whereby the exhibits were eight donated by or bought from the people of



'al-Muhallab' sailing boat which was standing on the sea-front of the Kuwait National Museum before 1990 war and after (Inset)

Kuwait. A year later, in 1958, the archaeological collection was introduced to the museum due to the fruitful result of the first excavations accomplished by Danish expedition.

Within a short period of time, after the inauguration of the new complex, the museum became one of the most active cultural centres in Kuwait.



A view of a gallery in the Kuwait National Museum after the 1990 war and before (Inset)

NATIONAL SCIENCE SEMINAR

The National Science Seminar organised by National Council of Science Museums every year for school students is an unique event in itself. Unlike other seminars, where experts deliberate, here students, less than 15 years of age, deliberate on topics of great scientific relevance. Thirty-one students, one from each State/Union Territory (barring Lakshadweep) expressed their views on the topic '*Are We Alone in the Universe?*' in the just concluded Seminar 1993 at the National Science Centre, Pragati Maidan, New Delhi, held on Oct 15, 1993.

BITM organised District Science Seminar on Aug 12 and the State Science Seminar on Aug 28. Nearly 600 students participated.

The National Science Seminar, a countrywide programme of the National Council of Science Museums, is organised at taluka, block, district, state and national level in a competitive manner every year. In 1993, more than 50,000 students participated at various levels and were heard by more than two lakh of students, teachers and general public.

Apart from giving the account of scientific and technological work done so far to establish existence of life other than on our blue planet, students put forth their own expectations. The topic itself has

been debated by scientists for centuries, but, this was perhaps for the first time that the younger generation deliberated with their imaginative faculties. May be one of these participants one day, will answer the question '*Are We Alone in the Universe?*'.

DSC Tirunelveli held the DSS on Jul 2. The programme was inaugurated by Dr Sunder Singh of M S University, Tirunelveli.

The possibility of life in this universe other than on earth has been an age old question and lot of efforts, energy and money has gone in attempts to reveal the truth which yet remains elusive. But we seem to be on the threshold of an answer. This has been possible with the advancement of scientific knowledge and technological breakthroughs. Important experiments such as SETI (Search for Extra-Terrestrial Intelligence), SERENDIP (Search for Extra-Terrestrial Radio Emission from Nearby) have been initiated or conducted, probing new parameters or newer possibilities.

RSC Guwahati held the SSS on Sep 4. It was participated by students from 21 schools and a large audience turned up from various schools and local people.

Existence of life forms anywhere requires a complex combination of factors viz. right size and age of the star, size of



the planet, its distance, spin, atmosphere, oxygen and water in natural form, accidental or deterministic formation of big molecules and finally the complex evolutionary process through which the primordial life molecule evolved to the present day human life form and intelligence.

DSC Dharampur organised the DSS on Aug 4.

Keeping in view the great degree of symmetries in our universe a logical question always haunts us why life only on earth is known so far, why not in other celestial systems or planets. It may be because of limitations of present scientific knowledge and technological solutions in probing them. The vastness of space is another hurdle in the way of quick investigation even though giant radio telescopes face skywards straining to decipher any intelligence in cosmic static. The possibility of intelligent life elsewhere remains a



NATIONAL SCIENCE SEMINAR



hot topic for science fiction writers and movie makers. But does planet earth have a competitor or may be have one some day, only the future can tell.

On Aug 20, DSC Purulia, in collaboration with District Youth Office, Purulia organised the 'Purulia District Science Seminar'.

The seminar was inaugurated by Dr P Rama Rao, Secretary, Dept of Science & Technology. Dr Rama Rao stressed need for cultivation and nurturing the talents of young children and developing scientific temper. Prof Y K Alagh, Vice Chancellor, JNU presided over the inaugural function. Shri P R Kumaramangalam, Union Minister of State for Science & Technology gave the valedictory address and expressed the need for more efforts towards science popularisation. He opined that students be exposed to works of Indian scientists. He lauded the role of NCSM in developing scientific temper among

young children. Prizes in the form of scholarships were given. Attractive science kits and books were also given to all participants as token of encouragement. Eminent scientist, Dr A P Mitra, FRS & Bhatnagar Fellow, CSIR also addressed the students.

In collaboration with Sports & Youth Services Dept, Bardhaman, SRSC Bardhaman organised the DSS on Aug 5.

A programme 'Meet the Scientists' was also organised for the participants on Oct 16. Prof S K Joshi, DG, CSIR, Prof J C Bhattacharya, Emeritus Prof, Indian Inst of Astrophysics, Bangalore, Dr A Bhatnagar, Director, Solar Observatory, Udaipur, Dr G P Phondke, Director, PID, CSIR and Dr V S Venkatavaradan, Director, Nehru Planetarium, Bombay addressed the students. Prof Joshi, while narrating the job of being a scientist, advised the students to choose science or technology as a career and unravel the mysteries of nature and face the challenges of future. The platform proved to be quite stimulating and encouraging for the students as the students satisfied their curious quest by asking a variety of questions. The participants and escort teachers were also exposed to the programmes and facilities of the science centre.

In collaboration with State Council of Educational Research & Training, Hyderabad, RSC Tirupati organised the SSS on Aug 19.

It was not merely an academic deliberation that marked NSS 93. The participants came dressed in their regional attire, adding colour to the intelligent presentations. On the evening of the 15th, the students presented a cultural programme to the delight of everyone.

Srikrishna Science Centre Patna organised SSS on Sep 7.

But a report on NSS 93 remains incomplete without a special mention of the honourable judges who patiently sat for hours listening to students presenting their own conclusions. The judges were Prof J C Bhattacharya, Dr V S Venkatavaradan, Dr A Bhatnagar, Dr B M Reddy, Head, Radio Physics, National Physical Lab, Pusa, New Delhi and Prof P N Dheer, Head, Dept of Astrophysics, Delhi University.

Winners of NSS 1993

1st Prize - Mahima Ashok, Kerala;
Special Prizes - Sandigdha Senapati, Orissa; Anindya Basu, West Bengal; Yonella Ovung, Nagaland; Anu Shahi, Punjab; Dipty Dutta, Delhi; Kavita Chechani, Rajasthan; Satarupa Bhattacharjee, Tripura; Sourav Roy, Chittagong and Krishna J Desai, Gujarat.



SCIENCE CENTRE NEWS

Acharya Prafulla Chandra Roy's birth anniversary (132nd) was solemnly celebrated on Aug 2, jointly with R K B K Acharya Prafulla Chandra Sammilanee.

Birla Industrial & Technological Museum, Calcutta on Aug 2, jointly with R K B K Acharya Prafulla Chandra Sammilanee. Among the many distinguished people who attended the programme, some spoke on the life and works of the Acharya - scientist Dr (Mrs) Ashima Chatterjee spoke of the Acharya as a teacher, Prof M K Dasgupta, Sr Scientist, INSA, spoke on the Acharya's contribution to science and science education in Calcutta, Dr Dharendra Nath Ganguly, Director Pavlov Institute, Calcutta outlined the Acharya's social services rendered to our country.

Men of learning as well as citizens of Calcutta came together on Aug 7 & 8 to discuss on 'Indian Thoughts for the Protection of Environment from the Vedic period to Present day'. The programme was organised by BITM along with two other clubs of Calcutta, Cosmos and Rotary Club of Calcutta - North West. Dr Pratap Chandra Chunder inaugurated the seminar by speaking on the vedic concepts of conservation. Swami Lokeswarananda presided over the seminar. The speakers dealt with the various aspects of environmental education and protection.

On Aug 9, BITM organised a novel programme to explore a non-conventional method of mass communication to popularise science museums in the rural areas: During the day, a selected number of folk singers from rural Bengal - the Bauls and Patuas -



Folk songs by Bauls

were taken around the BITM and the exhibits explained to them. In the evening, the participants composed songs on what they had seen and rendered the same before an august gathering. A video has been prepared on the day's workshop by Pranay Dutta, an expert on folk music and mass communication.

BITM, Calcutta organized Practical Training from Sept 6-16. Eleven post graduate students of Museology Dept from the University of Calcutta were trained in the preparation of layout models and dummy for galleries on subjects related to folk art, archaeology and ocean. The students showed keen

interest in practical work and enthusiastically participated in the projects.

The Science Association of Bengal in collaboration with BITM, Calcutta celebrated the birth centenary of Dr Jnan Chandra Ghosh on Sept 15. Dr Anutosh Dutta, Sheriff of Calcutta inaugurated the celebration and outlined the contributions of Dr Ghosh. He emphasized that Dr Ghosh's works and ideals should be projected properly to all our countrymen. Dr Sushil Kumar Mukherjee, Ex-Vice Chancellor, Calcutta University recalled the great man's international recognition and his contributions to the advancement of electro-chemistry, theory of salt solutions and the mechanisms of various chemical reactions. Prof M K Dasgupta, Sr Scientist, INSA and Dr D K Bose, Secretary, Dept of Science and Technology, Govt of West Bengal also spoke on the life and works of Dr Ghosh. A film on 'J C Ghosh - Scientist with a vision' was also screened in the programme. Many distinguished scientists and scholars attended the programme.



Practical training for Museology students

SCIENCE CENTRE NEWS



Festival on Environment

Nehru Science Centre, Bombay organised a 'Festival on Environment' between July 20 & 25 in collaboration with WWF-India. The attending dignitaries included Darry D'Monte, Resident Editor, Times of India, Consul General, Charles Mast of US Consulate, Prof Susan G Hadden, LBJ School of Public Affairs, University of Texas, USA. The competitive categories included elocution, debate, interschool and college exhibitions. There were also exhibition-cum-sale of books on environment, a panel exhibition on the theme of environment of America (prepared by USIS) and a festival of films on environment. On the concluding day, S P Godrej, Vice-President, WWF-India and Bittu Sehgal, Editor, Sanctuary Magazine attended.

Between Sept 18 and 24, **Regional Science Centre, Bhubaneswar** observed its Fourth Anniversary week. The highlight of the week-long celebration was the exhibition 'Pathani Samanta'. Dr Trilochan Pradhan, Professor Emeritus, Inst of Physics presided over the inaugural function. There were several competitive categories - computer software development, essay writing and extempore talks and quiz on computers.

Popular talks on the themes 'The art and science of perceptions', 'Plant Tissue Culture' and 'Computers in detection of Crime' were delivered by Prof H S Ray, Director, Regional Research Lab., Dr G R Rout, Scientist, Regional Plant Resource Centre and R Chandramohan, Supdt. of Police, Orissa, respectively. Magician Anupam Bose demonstrated on the theme "Science in Magic".

Raman Science Centre, Nagpur organised a TTP between July 20 & 30. It was attended by D.Ed students of four colleges and were given practical training in fabrication of teaching aid materials.



Teachers' Training Programme

Regional Science Centre, Lucknow observed its Fourth Anniversary between Sept 7 & 9. S S Sandhu, IAS was the Chief Guest on the inaugural day. Also inaugurated was the newly prepared 'Technology at Home' kit, a mobile science exhibit. A computer software development competition and a debate on science were initiated to evoke participants' interests. Popular lectures were delivered on Computer Communication & Network and Conservation Science. But the most viewed item on show was the prize winning robot prepared by a young student Md Tahseen Ameen that won a prize in the International Robot Olympiad.



Prize Winning Robot at International Robot Olympiad

District Science Centre, Dharampur celebrated Van Mahotsav on July 17. To spread the seed of afforestation programmes, various ways were adopted: saplings of economically important plants were distributed among the tribals under IRDP beneficiary programmes, bamboo, suru and teak were planted at various areas, distribution of pots with decorative plants to the participants and popular lectures on 'window gardening' and 'kitchen garden' were organised. District Rural Development Agency and Nehru Yuva Kendra, both from Valsad collaborated in the programme.

On Aug 6, DSC, Dharampur observed the beginning of International Breast Feeding Week through a series of programmes that highlighted on the health of a nursing mother. Food and Nutrition Board, Extension Centre of Valsad gave demonstration of recipes for nursing mothers of the tribal communities; housewives attended an essay competition on the theme of health education; Dr P V Mehta of Bombay and Supdt., State Hospital, Dharampur gave special medical lectures and there were also film and slide shows on relevant topics.

SCIENCE CENTRE NEWS

District Science Centre, Gulbarga observed World Population Day on July 11 in collaboration with various local units involved in family welfare and health. The theme of the programme was Population Stabilisation - need for voluntary action. The programme was inaugurated by Dr N Rudraiah, VC, Gulbarga University and presided over by Lion O H Amaresh AIGP (retd).

World Peace Day was observed on Aug 8 by DSC, Gulbarga and the programme extended till Aug 6. Competitions for students were organised that included extempore lectures, on-the-spot painting competitions and essay compositions. The quiz was open to all.

Community Science Programme got a touch of colour as Fevicryl Company Ltd, Bangalore and Priyadarshini Mahila Mandal, Gulbarga came forward to assist DSC, Gulbarga in holding a programme on fabric painting. Open to women of the town, the programme found vivid expression through paint and brush.

DSC, Gulbarga, Gulbarga University and National Remote Sensing Agency, Hyderabad conducted an awareness programme on 'Remote Sensing Applications' between Sept 10 & 15. The programme was held at various educational institutions to enable students to become familiar with the concept.

'Education of Girls' was the theme of the Prof T S Mehta Award Painting Competition organised by DSC, Gulbarga, FPAI, Field Publicity Office and Lions Club, all from the area. The prize distribution ceremony was held

on Sept 15 and Shivasharanappa Nandoor, President, Lions Club of Gulbarga gave away the awards.

District Science Centre, Tirunelveli observed World Population Day on July 11 through a special rural awareness camp at Cheranmahadevi. Organised with the help of Tamil Nadu Family Welfare Dept and SCAD, both from Tirunelveli, the programme included medical lecture, demonstrations by Tamil Nadu Integrated Nutrition Project and film shows organised by Family Welfare Dept. The District Communication Officer of Tirunelveli, Panner Velu, gave the presidential address.

DSC, Tirunelveli collaborated with Tamil Nadu State Education Dept to organise a series of District Science Fairs at various places – Virudhunagar (Aug 18-19), Nagercoil (Aug 28-30), Tirunelveli (Sept 3-5). The programmes elicited response from the local people.

DSC, Tirunelveli and Dept of Ophthalmology of Tirunelveli Medical College jointly organised the Eighth National Eye Donation Fortnight that concluded on Sept 8.

Hiroshima Day was observed on Aug 6 by DSC, Tirunelveli through popular lectures on Nuclear Energy : a boon or bane (by Dr G Shanmugam, Head of Dept of Nuclear Physics, MS University) and Homi J Bhabha : his contribution to nuclear physics (by Dr N Arunachalam, Reader, Dept of Nuclear Physics, MS University). A street play entitled 'Hiroshima' was staged by Nehru Yuva Kendra.



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SCIENCE GARDEN

HEY, WHAT ARE YOU DOING?

TRYING TO BE NEWTON